keys, such as phase modulation is so imparted as described and having a value later determined for making a correction for a fluctuation of the difference in optical path between said reference signal and said transmission signal which develops by reason of an external cause.

10. (Amended) A quantum cipher communication system as set forth in any one of claims 1-4, 6 or 7, characterized in that such phase modulations are so imparted as described and including those for transmitting privacy keys and those with values later determined are randomly repeated.

11. (Amended) A quantum cipher communication system as set forth in any one of claims 1-4, 6 or 7, characterized in that eavesdropping is detected on the basis of an increase in the error rate of said difference signal.

12. (Amended) A quantum cipher communication system as set forth in any one of claims 1-4, 6 or 7, characterized in that eavesdropping is detected on the basis of a change in a Wigner distribution function that indicates a quantum mechanical state of said difference signal.

13. (Amended) A quantum cipher communication system as set forth in any one of claims 1-4, 6 or 7, characterized in that said two output lights are converted into corresponding electric signals through photoconductor diodes.

A1 end

14. (Amended) A quantum cipher communication system as set forth in any one of claims 1-4, 6 or 7, characterized in that for said photoconductor diodes, use is made of silicon photoconductor diodes when the light has a wave length of 600 nm to 900 nm, and of InGaAs photoconductor diodes when the light has a wave length of 1000 nm to 1500 nm.